

Before The
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Amendment of Part 2 of the Commission's Rules)	ET Docket No. 00-258
to Allocate Spectrum Below 3 GHz for Mobile)	
and Fixed Services to Support the Introduction of)	
New Advanced Wireless Services, including Third)	
Generation Wireless Systems)	
)	
The Establishment of Policies and Service Rules)	IB Docket No. 99-81
for the Mobile-Satellite Service in the 2 GHz Band)	
)	
Amendment of the U.S. Table of Frequency)	RM-9911
Allocations to Designate the 2500-2520 / 2670-)	
2690 MHz Frequency Bands for the Mobile-)	
Satellite Service)	
)	
Petition for Rule Making of the Wireless)	RM-9498
Information Networks Forum Concerning the)	
Unlicensed Personal Communications Service)	
)	
Petition for Rule Making of UTStarcom, Inc.)	RM-10024
Concerning the Unlicensed Personal)	
Communications Service)	

COMMENTS OF VERIZON WIRELESS

SUMMARY

Verizon Wireless respectfully submits these comments in response to the Commission's Third Notice of Proposed Rulemaking to allocate spectrum that will support the development of advanced wireless services ("AWS").¹ As has been made

¹*In the Matter of Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New*

clear throughout this proceeding, the allocation of additional spectrum is vitally important to the development of Third Generation mobile and other emerging advanced wireless services, and to the continued long-term growth of the wireless industry.² Verizon Wireless appreciates the Commission's continued efforts to identify and make available additional spectrum that will facilitate the provision of innovative wireless services to the benefit of U.S. consumers and the economy.

In particular, Verizon Wireless applauds the Commission's decision to reallocate a substantial portion of the 2 GHz band that had been licensed to the Mobile Satellite Service ("MSS"), making it available for more beneficial uses.³ We recommend that this spectrum, as well as other spectrum identified in the Notice, be reallocated for AWS consistent with the principles described herein. Specifically, we recommend that the Commission reallocate 2155-2180 MHz, and pair this spectrum in an asymmetrical manner with the 1710-1755/2110-2155 MHz bands already allocated for AWS.

Advanced Wireless Services, including Third Generation Wireless Systems (ET Docket No. 00-258) ("AWS Proceeding"), Third Notice of Proposed Rulemaking ("Notice"), FCC 03-16 (rel. Feb. 10, 2003).

² See Comments of Verizon Wireless (filed Aug. 28, 2000), in response to *In the Matter of Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Implementation of WRC-2000: Review of Spectrum and Regulatory Requirements for IMT-2000*, Public Notice, DA 00-1673, (rel. Jul. 28, 2000), at 2; see Comments of Verizon Wireless (filed Feb. 22, 2001), in response to AWS Proceeding, Notice of Proposed Rulemaking, FCC 00-455, (rel. Jan. 5, 2001), at 2; see Joint Comments of the Cellular Telecommunications and Internet Association, Telecommunications Industry Association, and Personal Communications Industry Association (filed Feb. 22, 2001), in response to AWS Proceeding, at 2.

³ *In the Matter of Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems; The Establishment of Policies and Service Rules for the Mobile-Satellite Service in the 2 GHz Band*, Third Report and Order ("Order"), FCC 03-16 (rel. Feb. 10, 2003).

I. THE COMMISSION MUST PROTECT EXISTING SERVICES FROM HARMFUL INTERFERENCE.

Verizon Wireless has previously noted the importance of limiting the potential for harmful interference.⁴ This objective is at the very core of the FCC's spectrum management responsibilities, as codified in Section 303 of the Communications Act, which requires the Commission to establish rules to "prevent interference between stations."⁵ As the Commission continues its efforts to make new sources of spectrum available, it should be mindful of its mandate to protect existing services and should not promote new uses that would result in harmful interference to such services.

As the Commission decides how to best make use of the reallocated MSS spectrum, it must take into account the potential for some uses to cause harmful interference to existing services.⁶ It should prohibit such uses and/or establish technical rules that adequately protect existing services. Such action is necessary to ensure that the availability and reliability of existing services are not diminished and limited resources

⁴ See Comments of Verizon Wireless (filed Feb. 28, 2003), in response to *Spectrum Policy Task Force Report* (ET Docket No. 02-135), at 4.

⁵ See 47 U.S.C. § 303(f).

⁶ In response to proposals to deploy ancillary terrestrial services in the 2 GHz MSS band, Verizon Wireless noted the potential for existing services to be substantially harmed by incompatible uses in adjacent bands. Specifically, the use of a band for mobile transmissions (e.g., ATC mobiles) would likely result in significant harmful interference if it were permitted in spectrum that was immediately adjacent to, or in close proximity to, a band used for mobile reception (e.g., PCS mobiles). Conversely, operations in two adjacent bands would not result in harmful interference if their uses were compatible, e.g., if both were used for base station transmissions such as with AWS and MSS/ATC spectrum above 2110 MHz. See *Generally Ex Parte Presentation of Verizon Wireless* (filed Jan. 6, 2003) ("Verizon Wireless Ex Parte"), in response to *In the Matter of Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Band*, Notice of Proposed Rulemaking ("MSS Terrestrial Flexibility Proceeding") (IB Docket No. 01-185).

are not diverted to interference mitigation. There are more than 140 million subscribers to commercial mobile services in the U.S. today, and most use phones that access the PCS band. The introduction of additional interference into PCS can have a substantially harmful effect on these customers, including dropped calls, reduced coverage, and a decrease in service quality. While some types of interference can be mitigated, it cannot be reduced appreciably without substantial cost or even replacement of subscribers' phones – which would result in higher prices and significant inconvenience to consumers.

II. THE COMMISSION SHOULD ENSURE THAT FUTURE USES OF THE 1910-1930 MHz BAND DO NOT CAUSE HARMFUL INTERFERENCE TO EXISTING LICENSED SERVICES.

The Notice seeks comment on the potential reallocation of spectrum in the 1910-1930 MHz band.⁷ Verizon Wireless has previously cautioned the Commission about reallocating the 1910-1930 MHz band, or portions thereof, for uses that would interfere with existing Personal Communications Services (“PCS”) operating in the 1930-1990 MHz band.⁸ We continue to ask the Commission to exercise extreme caution in this area.

When the Commission established the rules for PCS, it determined that there should be a 20 MHz “guard band” to separate the mobile transmit and base transmit bands.⁹ This guard band is important to ensure that PCS mobile transmitters do not interfere with PCS mobile receivers. Given that many PCS mobile phones utilize

⁷ Notice at ¶41. The Commission proposes the reallocation of 1910-1920 MHz to support new licensed PCS services, i.e., “G” and “H” blocks of PCS.

⁸ Verizon Wireless Ex Parte, at 1.

duplexers that transmit and receive simultaneously, sufficient frequency separation is critical to ensure the proper operation of the PCS phone.

After extensive technical analysis and consultation with PCS equipment manufacturers, Verizon Wireless has determined that a reduction in guard band of 5 MHz (from 20 MHz to 15 MHz) could be achieved without causing harmful interference to existing PCS phones, subject to the condition that the use of the 1910-1915 MHz band conform to existing PCS rules under Part 24.¹⁰ Consequently, we believe that it is possible to reallocate the 1910-1915 MHz band (paired with 1990-1995 MHz) for new licensed PCS services (so-called “G” block) without causing harmful interference to existing PCS customers.¹¹

Verizon Wireless continues to oppose the reallocation of 1915-1920 MHz, or any spectrum between 1915-1930 MHz, for new uses including the establishment of an “H” block of PCS.¹² As we, and others in the wireless industry, have previously noted, the use of the existing PCS guard band for such purposes would result in substantial harmful interference to existing PCS services.¹³ The duplexer employed in PCS mobile phones

⁹ The Commission chose to permit the operation of unlicensed PCS devices in the “guard band,” since they operate at low power and are required to operate without causing interference to licensed services.

¹⁰ For example, 1910-1915 MHz should be restricted to mobile transmit and operations should comply with power, emissions, and other technical rules included in Part 24.

¹¹ The establishment of a new “G” block of PCS would require the reallocation of 1990-1995 MHz. This band should be restricted to base transmit and operations should comply with the provisions of Part 24.

¹² As a result, Verizon Wireless opposes the reallocation of 1995-2000 MHz for a new “H” block of PCS. Moreover, this band should not be reallocated to uses that would cause harmful interference to PCS.

¹³ See Ex Parte Letter of the Cellular Telecommunications and Internet Association (filed Dec. 20, 2002), in response to MSS Terrestrial Flexibility Proceeding, at 1; see Ex Parte

cannot be designed to operate effectively without at least 15 MHz of frequency separation between the mobile transmit and mobile receive bands.

Verizon Wireless believes that the best use of the 1915-1930 MHz band continues to be for unlicensed PCS devices. Because these devices operate at relatively low power and are not permitted to cause harmful interference to licensed PCS services, they are well suited to operate in the PCS guard band. We acknowledge that the 1910-1920 MHz band has seen minimal use, and that the establishment of disparate rules for asynchronous devices in this band versus isochronous devices in the 1920-1930 MHz band may have contributed to this fact. As a result, extending isochronous unlicensed use under the existing rules to the 1915-1920 MHz band, as suggested by the Commission,¹⁴ may have some merit so long as it does not result in harmful interference to licensed PCS services. However, we strongly oppose proposals by WINForum, UTStarcom, TIA, Ericsson, and ArrayComm to change the rules applicable to unlicensed operations in the 1910-1930 MHz band.¹⁵ Such proposals would change substantially the way in which unlicensed devices are operated in the band, and cause significant harmful interference to licensed PCS services.

Presentation of Motorola (filed Dec. 17, 2002), in response to AWS Proceeding, at Attachment.

¹⁴ Notice at ¶ 52.

¹⁵ Id at ¶ 42, ¶ 43, and ¶ 54.

III. REALLOCATED MSS SPECTRUM SHOULD BE USED TO SUPPORT ASYMMETRICAL ADVANCED WIRELESS SERVICES.

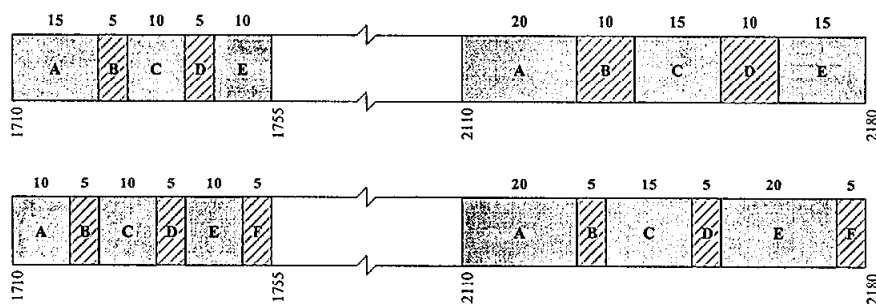
In allocating and assigning the spectrum reallocated from the 2 GHz MSS band, the Commission should ensure that it promotes efficient and economic uses of the spectrum without harming existing wireless services. Unfortunately, the manner in which the band was reallocated does not facilitate the availability of significant amounts of paired spectrum that can be harmonized with other worldwide allocations.¹⁶ Consequently, Verizon Wireless believes that the most efficient and effective use for most of this spectrum would be to combine it with the spectrum already allocated to AWS (i.e., 1710-1755 / 2110-2155 MHz), and use it to support the provision of asymmetrical wireless applications. Spectrum allocated to AWS is likely to support, among other things, a wide variety of high-speed data applications that require more “downstream” capacity (i.e., base-to-mobile) than “upstream” capacity (i.e., mobile-to-base). As a result, the availability of asymmetrical spectrum pairings in frequency bands that are harmonized worldwide would help to facilitate the provision of high-speed data services while promoting the most efficient use of available spectrum resources.

Verizon Wireless recommends that the Commission reallocate the 2155-2180 MHz band to AWS, and license this spectrum with the 1710-1755/2110-2155 MHz bands as part of an asymmetrical band plan. We note that there are a variety of alternative band plans that the Commission could use to facilitate the use of asymmetrical pairings. We

¹⁶ The Commission has identified 25 MHz of additional “downlink” spectrum (2155-2180 MHz), while only 5 MHz of the proposed reallocated spectrum (2020-2025 MHz) could be used for “uplink” spectrum without causing harmful interference to existing services.

identify two possible alternatives in Figure 1. These are provided for illustrative purposes only, and we recommend that the Commission explore fully other options as part of a further rulemaking proceeding to establish technical and service rules for AWS.

Figure 1. Sample Band Plans for AWS



IV. THE COMMISSION SHOULD REALLOCATE THE 2020-2025 MHz BAND FOR FEDERAL GOVERNMENT USE.

Verizon Wireless notes that there is no optimal pairing arrangement available for the 2020-2025 MHz band that would make it particularly suitable for AWS.

Consequently, the 2020-2025 MHz band may be best used if it were reallocated to the Federal Government, providing additional spectrum for the Department of Defense (“DoD”).

In deciding to reallocate and make available the 1710-1755 MHz band, NTIA noted that the 2025-2110 MHz band should be made available in some parts of the

country for DoD use.¹⁷ This will allow DoD to move its satellite operations out of the 1710-1850 MHz band, and thus, provide additional spectrum in the 1755-1850 MHz band to accommodate the relocation of Federal ground systems out of 1710-1755 MHz. The availability of additional spectrum adjacent to the 2025-2110 MHz band may make the transition out of the 1710-1755 MHz band easier for DoD, and thus, accelerate the availability of the band for commercial use.

Alternatively, the 2020-2025 MHz band could be reallocated to unlicensed uses. This would provide additional spectrum for unlicensed uses, and a replacement for the reallocated 1910-1915 MHz band – assuming that band is reallocated for PCS as proposed by the Commission.

¹⁷ *An Assessment of the Viability of Accommodating Advanced Mobile Wireless (3G) Systems in the 1710-1770 MHz and 2110-2170 MHz Bands*, A Report by the National Telecommunications and Information Administration (NTIA), July 22, 2002, at 2.

CONCLUSION

Verizon Wireless urges the Commission to allocate and make available the majority of the reallocated MSS spectrum, as well as the 2155-2165 MHz band, for advanced wireless services, consistent with the recommendations described herein. Moreover, the Commission should make these allocations in a manner that promotes the most efficient and effective use of this spectrum, while avoiding the potential for harmful interference to existing services.

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Dated: April 14, 2003

Certificate of Service

I hereby certify that on this 14th day of April copies of the foregoing "Comments of Verizon Wireless" in WT Docket 00-258 were sent by hand delivery, or e-mail, to:

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